

Appl. No.: 10/731,829
Amdt. dated June 2, 2006
Reply to Office action of December 2, 2005

Remarks

As noted above, this Supplemental Preliminary Amendment is intended to supplement the prior Preliminary Amendment. For the sake of completeness, the remarks submitted with the prior Preliminary Amendment are repeated with modifications being made so as to be consistent with the further amendments set forth herein.

The Official Action maintained the rejection of Claims 1-3, 5, 12, 13, 17, 18, 21, 23, 30 and 31 under 35 U.S.C. § 102(e) as being anticipated by U.S. Patent No. 6,554,639 to John Doriski, Jr. Further, the Official Action maintained the rejection of Claims 19, 20, 35, 36 and 38-41 under 35 U.S.C. § 103(a) as being unpatentable over the Doriski '639 patent. Independent Claims 1, 17 and 35 have been amended to further patentably distinguish the claimed invention from the cited reference. Additionally, new dependent Claims 44-48 have been added to define other unique aspects of the present invention. Based on the foregoing amendments and the following remarks, Applicants respectfully request reconsideration to the present application and allowance of the claims.

Independent Claim 1 is directed to an integration area for providing interconnections. As recited, independent Claim 1 includes a plurality of component connection receptacles, a plurality of first conductive elements extending from each component connection receptacle and a plurality of second conductive elements. Each second conductive element extends across at least one first conductive element as shown, for example, by elements 32 and 36 in Figures 2 and 3. Independent Claim 1 also recites that the integration area includes a plurality of connections between the first and second conductive elements to provide interconnections. Notably, the plurality of connections are established at those intermediate locations at which the second conductive elements extend across the first conductive elements. As described on at least pages 9 and 10 of the specification, each conductive element may include an insulative portion and a conductive portion, such as a plurality of conductive traces. As now amended, independent Claim 1 further recites that the interconnections between first and second conductive elements are established by interconnections between corresponding conductive portions of the first and second conductive elements. These interconnections

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are defined by amended Claim 1 to be at respective intermediate locations at which a conductive portion of a second conductive element extends across at least one conductive portion of a first conductive element. As a result of this configuration, Claim 1 has been further amended to recite that a conductive portion of each first and second conductive element includes an elongate portion extending outwardly from both sides of the corresponding conductive portion at the intermediate location at which an interconnection is established. See, for example, Figure 6 in which the conductive traces 62, 64 extend across one another in an orthogonal arrangement:

The Doriski '639 patent describes a wiring interface in which wire separation categories are assigned for panel connections and one or more separation dedicated connectors are assigned for each category. The separation dedicated connectors are connected via integration wire bundles.

The Official Action references Figure 3b of the Doriski '639 patent in conjunction with the extension of the second conductive elements across the first conductive elements as recited by independent Claim 1. However, even if it were assumed that the Doriski '639 patent does describe the extension of the second conductive elements across the first conductive elements (an assumption with which Applicants do not necessarily agree), the Doriski '639 patent does not teach or suggest first and second conductive portions interconnected at an intermediate location and extending outwardly therefrom in the manner set forth by amended independent Claim 1. As previously noted, the only connections disclosed by the Doriski '639 patent are various splices, designated by SP1, SP2, etc. and shown in Figure 3B, for example. Although the splices provide connection between conductors, the conductors that are spliced do not connect the conductors in such a manner that each connector includes an elongate portion that extends outwardly from both sides of the other connector as now recited by amended independent Claim 1. Instead, splices generally wrap the conductors tightly about one another and do not configure either of the conductors so as to extend outwardly from both sides of the other conductor.

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The Official Action also attached an annotated version of Figure 3A of the Doriski '639 patent (reproduced below) in support of its position that the Doriski '639 patent disclosed a connection.

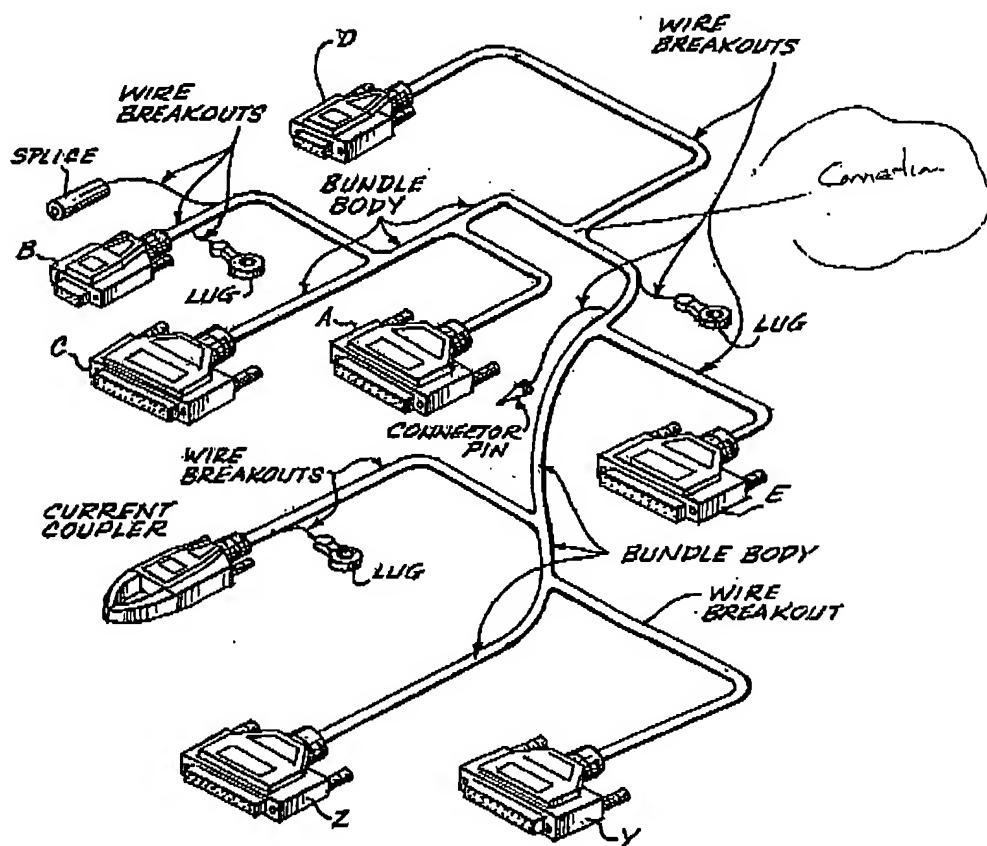


Fig. 3A.

With more specific reference to the language of amended independent Claim 1, independent Claim 1 recites that "the plurality of interconnections between first and second conductive elements are established by interconnections between corresponding conductive portions of said first and second conductive elements at respective intermediate locations at which a conductive portion of said second conductive element extends across at least one conductive portion of said first conductive element such that a

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conductive portion of each first and second conductive element includes an elongate portion extending outwardly from both sides of the corresponding conductive portion at the intermediate location at which an interconnection is established." Thus, not only must the conductive portions of the first and second conductive elements extend across one another in such a manner that elongate portions of the conductive portion of each conductive element extend outwardly from both sides of the conductive portion of the other conductive element, but the interconnection itself must be established at the intermediate location at which a conductive portion of a second conductive element extends across a conductive portion of a respective first conductive element.

With reference to the position taken by the Official Action and purportedly evidenced by the annotated version of Figure 3a (reproduced above), Applicants note that the point identified as a "connection" in the annotated version of Figure 3a is not, in fact, described by the Doriski '639 patent to be a connection of any type including, for example, a connection as defined by amended independent Claim 1. In particular, Figure 3a of the Doriski '639 patent and its accompanying description does not teach or suggest that a conductive portion of each second conductive element extends across a corresponding conductive portion of at least one first conductive element at an intermediate location and that connections are established at those intermediate locations such that the conductive portion of each first and second conductive element includes an elongate portion extending outwardly from both sides of the corresponding conductive portion with which an interconnection is established, as now recited by amended independent Claim 1. Instead, the point identified as a "connection" is merely a point at which a larger wire bundle is split into two smaller wire bundles. This splitting or redirection of the wires is not described to involve any type of connection and as shown in more detail in Figures 3b-3d, the point indicated to be a "connection" in the annotated version of Figure 3a actually only involves a redirection of the wires in different directions so as to form different smaller bundles with no connection of any sort at the point identified to be a "connection."

For each of the foregoing reasons, the Doriski '639 patent does not teach or suggest an integration area as recited by independent Claim 1 in which a conductive

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portion of each second conductive element extends across at least one corresponding conductive portion of a first conductive element at an intermediate location and connections are established at those intermediate locations such that the conductive portion of each first and second conductive element includes an elongate portion extending outwardly from both sides of the corresponding conductive portion with which an interconnection is established. Independent Claims 17 and 35 have been similarly amended and also include comparable recitations and are therefore not taught or suggested by the Doriski '639 patent for at least the same reasons as described above in conjunction with independent Claim 1. Thus, the rejection of independent Claims 1, 17 and 35 is therefore overcome.

Since the dependent claims include the recitations of a respective independent claim, the dependent claims are therefore also patentably distinct from the Doriski '639 patent for at least the same reasons as described above in conjunction with the respective independent claims. However, a number of the dependent claims also include additional recitations that are not taught or suggested by the Doriski '639 patent and that therefore provide additional patentable distinctions. For example, dependent Claims 5, 23 and 38 define the plurality of connections between the first and second conductive elements to include a plurality of connection vias and a plurality of solder patches with each solder patch connecting at least two of the connection vias. While the Official Action points to Figures 3a, 3b and 3d of the Doriski '639 patent relative to these dependent claims, it is submitted that the Doriski '639 patent, including Figures 3a, 3b and 3d, does not define the connections between the first and second conductive elements to include a plurality of connection vias with solder patches connecting at least two of the connection vias.

Additionally, dependent Claim 39 further recites that connections are automatically made at at least one of the connection points based upon a configuration of connections that is received. The Doriski '639 patent does not teach or suggest automatically making connections as recited by dependent Claim 39. In addition, the Doriski '639 patent does not teach or suggest connecting first and second backplanes as recited by dependent Claims 40 and 41. In this regard, the Official Action is completely

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silent as to the basis of the rejection of dependent Claims 39-41 other than the general reference to these claims being obvious over the Doriski '639 patent.

Further, new dependent Claims 44, 46 and 48 have been added that recite the first and second conductive elements lie in different planes and are connected by interconnections that extend between the first and second planes. The Doriski '639 patent also fails to teach or suggest conductive elements positioned in different planes with interconnections extending therebetween, as recited by these new dependent claims. Additionally, new dependent Claims 45 and 47 have been added that recite a plurality of interconnecting elements distinct from but joined to respective pairs of said first and second conductive elements. The Doriski '639 patent also fails to teach or suggest a plurality of interconnecting elements distinct from, but joined to respective pairs of said first and second conductive elements, as recited by these new dependent claims. Thus, dependent Claims 5, 23, 38-41 and 44-48 are also not taught or suggested by the Doriski '639 patent for each of these additional reasons. As described above, the rejections of the dependent claims are therefore also overcome.

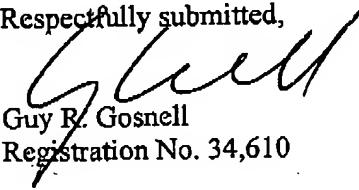
CONCLUSION

In view of the foregoing amendments and the accompanying remarks, it is respectfully submitted that all of the present claims of the present application are in condition for immediate allowance. It is therefore respectfully requested that a Notice of Allowance be issued. The Examiner is encouraged to contact Applicants' undersigned attorney to resolve any remaining issues in order to expedite examination of the present application.

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It is not believed that extensions of time or fees for net addition of claims are required, beyond those that may otherwise be provided for in documents accompanying this paper. However, in the event that additional extensions of time are necessary to allow consideration of this paper, such extensions are hereby petitioned under 37 CFR § 1.136(a), and any fee required therefore (including fees for net addition of claims) is hereby authorized to be charged to Deposit Account No. 16-0605.

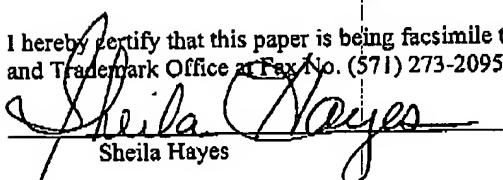
Respectfully submitted,


Guy R. Gosnell
Registration No. 34,610

Customer No. 00826
ALSTON & BIRD LLP
Bank of America Plaza
101 South Tryon Street, Suite 4000
Charlotte, NC 28280-4000
Tel Charlotte Office (704) 444-1000
Fax Charlotte Office (704) 444-1111

CERTIFICATION OF FACSIMILE TRANSMISSION

I hereby certify that this paper is being facsimile transmitted to Examiner Javaid H. Nasri at the US Patent and Trademark Office at Fax No. (571) 273-2095 on the date shown below.


Sheila Hayes

June 6, 2006
Date